INVENTOR: Luo, Shun
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Claims

What is claimed is:

1. A method and system for simultaneous analysis of samples, comprising:

   obtaining a number of samples to be analyzed;

   extracting RNA from each said sample to be analyzed;

   isolating mRNA from said RNA to use as a template for synthesizing DNA;

   synthesizing cDNA from each said mRNA of each said sample;

   labeling each said cDNA with a label;

   depositing an array of known reagents into as many wells of a multi-well

   microtiter plate platform as desired for a particular assay and immobilizing

   each said array thereon;

   depositing at least one of said labeled cDNA into at least one well of said

   multi-well microtiter plate platform;

   depositing at least one said labeled cDNA into as many said wells having

   a said array therein as desired for a particular assay;

   allowing said each said labeled cDNA to hybridize to said array of known

   reagents in each said well;

   reading said microtiter plate platform after hybridization is completed; and

   using software, processing signals generated and read from said at least

   one label into a format useful for analysis.

2. The method according to claim 1 wherein said number of samples to be assayed simultaneously is at least about 6.

3. The method according to claim 1 wherein said samples are chosen from the group consisting of: DNA, RNA, PNA, genes, portions of genes, polynucleotides, polypeptide biopolymers, fragments of DNA, fragments of RNA, short oligonucleotides, proteins and polypeptides.

4. The method according to claim 1 wherein said label is chosen from the group consisting of: a fluorescent label, a radio label, a colorimetric label, or a reflective label.

5. The method according to claim 4 wherein said reading is performed on a device capable of reading a signal chosen from the group consisting of: fluorescence, radioactivity, color intensity, and reflection changes.

6. The method of claim 1 wherein two samples are deposited in each well of said microtiter plate platform.

7. The method of claim 6 wherein each of said two samples is labeled with a different label.

8. The method of claim 7 wherein said reading is performed using a device capable of simultaneously reading two of the same type of signals.

9. A method and system of parallel analysis of samples simultaneously, comprising:

obtaining a number of samples to be analyzed;

extracting RNA from each said sample to be analyzed;

isolating mRNA from said RNA to use as a template for synthesizing DNA;

synthesizing cDNA from each said mRNA of each said sample;

labeling each said cDNA with a label;

depositing an array of known reagents into as many wells of a multi-well microtiter plate platform as desired for a particular assay and immobilizing each said array thereon;

depositing one of said labeled cDNA into a well of said multi-well microtiter plate platform;

depositing one said labeled cDNA into as many said wells having a said array therein as desired for a particular assay;

allowing said each said labeled cDNA to hybridize to said array of known reagents;

reading said microtiter plate platform after hybridization is completed; and

using software, processing signals generated and read from said label into a format useful for analysis.

10. The method according to claim 9 wherein said number of samples to be assayed simultaneously is at least about 6.

11. The method according to claim 9 wherein said samples are chosen from the group consisting of: DNA, RNA, PNA, genes, portions of genes,

polynucleotides, polypeptide biopolymers, fragments of DNA, fragments of

RNA, short oligonucleotides, proteins and polypeptides.

12. The method according to claim 9 wherein said label is chosen from the

group consisting of: a fluorescent label, a radio label, a colorimetric label,

and a reflective label.

13. The method according to claim 12 wherein said reading is performed on

a device capable of reading a signal chosen from the group consisting of:

fluorescence, radioactivity, color intensity and reflection changes.

14. The method according to claim 9 wherein each said sample is labeled

with the same said label.

15. A method for multiple parallel analysis of samples simultaneously,

comprising:

obtaining a number of samples to be analyzed;

extracting RNA from each said sample to be analyzed;

isolating mRNA from said RNA to use as a template for synthesizing DNA;

synthesizing cDNA from each said mRNA of each said sample;

labeling each said cDNA with one of either a first or a second label;

depositing an array of known reagents into as many wells of a multi-well

microtiter plate platform as desired for a particular assay and immobilizing

each said array thereon;

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depositing one said cDNA labeled with said first label, and one said cDNA labeled with said second label into the same well of said multi-well microtiter plate platform;

depositing both a said cDNA labeled with said first label and a said cDNA labeled with said second label in as many wells having a said array therein as desired for a particular assay;

allowing said both said labeled cDNAs to hybridize to said array of known reagents in each said well;

reading said microtiter plate platform after hybridization is completed; and

using software, processing signals generated and read from said first and said second labels into a format useful for analysis.

16. The method according to claim 15 wherein said number of samples to be assayed simultaneously is at least about 6.

17. The method according to claim 15 wherein said samples are chosen from the group consisting of: DNA, RNA, PNA, genes, portions of genes, polynucleotides, polypeptide biopolymers, fragments of DNA, fragments of RNA, short oligonucleotides, proteins and polypeptides.

18. The method according to claim 15 wherein said first and said second labels are chosen from the group consisting of: a fluorescent label, a radio label, a colorimetric label, and a reflective label.

19. The method according to claim 15 wherein said reading is performed on a device capable of reading simultaneously two of the same type of signals chosen from the group consisting of: fluorescence, radioactivity, color intensity, and reflection changes.

20. The method according to claim 1 wherein a universal or other control sample is deposited in at least one well of said microtiter plate platform, for use as an intra-well and inter-well normalization tool, to define background and align image for reading said microtiter plate platform.

21. The method according to claim 9 wherein a universal or other control sample is deposited in at least one well of said microtiter plate platform, for use as an intra-well and inter-well normalization tool, and to define background and align image for reading said microtiter plate platform.

22. The method according to claim 15 wherein a universal or other control sample is deposited in at least one well of said microtiter plate platform, for use as an intra-well and inter-well normalization tool and to define background and align image for reading said microtiter plate platform.

23. The method of claim 1 wherein said array of known reagents is deposited on the inner bottom surface of said well on an area in the maximum range of about 2.25mm x 2.25mm to about 36.0mm x 36.0mm, said area being dependent upon the number and size of wells formed in said microtiter plate platform and the density of the array deposited therein.

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24. The method of claim 9 wherein said array of known reagents is deposited on the inner bottom surface of said well on an area in the maximum range of about 2.25mm x 2.25mm to about 36.0mm x 36.0mm, said area being dependent upon the number and size of wells formed in said microtiter plate platform and the density of the array deposited therein.

25. The method of claim 15 wherein said array of known reagents is deposited on the inner bottom surface of said well on an area in the maximum range of about 2.25mm x 2.25mm to about 36.0mm x 36.0mm, said area being dependent upon the number and size of wells formed in said microtiter plate platform and the density of the array deposited therein.

26. The method of claim 23 wherein said inner bottom surface of each said well is glass.

27. The method of claim 24 wherein said inner bottom surface of each said well is glass.

28. The method of claim 25 wherein said inner bottom surface of each said well is glass.

29. A method and system for multiple parallel analysis of samples simultaneously, comprising:

depositing an array of known reagents into as many wells of a multi-well microtiter plate platform as desired for a particular assay and immobilizing each said array thereon;

depositing at least one labeled cDNA into at least one well of said multi-well microtiter plate platform;

depositing at least one said labeled cDNA into as many wells having a said array therein as desired for a particular assay;

allowing said each said labeled cDNA to hybridize to said array of known reagents in each said well;

reading said microtiter plate platform after hybridization is completed; and

using software, processing signals generated and read from said at least one label into a format useful for analysis.